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Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

Claim 1 (currently amended): An X-ray CT apparatus for generating a tomographic image by reconstructing projection data acquired by scanning a predetermined slice of a subject, ~~characterized by~~ said X-ray CT apparatus comprising detecting means for detecting a static cardiac time phase with a small amount of motion artifacts in a predetermined portion of the subject based on heartbeat information acquired in association with the projection data, and image reconstructing means for generating the tomographic image by reconstructing projection data corresponding to the static cardiac time phase detected by the detecting means.

Claim 2 (currently amended): An X-ray CT apparatus according to claim 1, ~~characterized in that~~ wherein the detecting means detects the static cardiac time phase based on correlation data between the heartbeat information and the static cardiac time phase that are previously determined to each subject.

Claim 3 (currently amended): An X-ray CT apparatus according to claim 2, ~~characterized in that~~ wherein the correlation data is prepared to each of different portions of the subject, and the detecting means comprises input means for setting the predetermined portions.

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Claim 4 (currently amended): An X-ray CT apparatus according to claim 2, ~~characterized in that~~ wherein the correlation data includes at least a correlation between a heartbeat rate and a static cardiac time phase.

Claim 5 (currently amended): An X-ray CT apparatus according to claim 2, ~~characterized by~~ further comprising memory means for storing the projection data acquired over a plurality of heart beat cycles and a projection data synthesizing means for reading the projection data corresponding to the static cardiac time phase detected by the detecting means and synthesizing the projection data, wherein the image reconstructing means reconstructs the projection data synthesized by the projection data synthesizing means.

Claim 6 (currently amended): An X-ray CT apparatus according to claim 1, ~~characterized in that~~ wherein the detecting means comprises sample tomographic image rearranging means for generating a plurality of sample tomographic images having a different cardiac time phase based on the projection data and the heartbeat information and selecting means for selecting a sample tomographic image with a small amount of motion artifacts from the plurality of sample tomographic images, wherein the image reconstructing means generates the tomographic image by reconstructing projection data corresponding to the cardiac time phase of the sample tomographic image selected by the selecting means.

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Claim 7 (currently amended): An X-ray CT apparatus according to claim 6, ~~characterized in that~~ wherein an image size of the sample tomographic image is set smaller than that of the tomographic image.

Claim 8 (currently amended): An X-ray CT apparatus according to claim 7, ~~characterized in that~~ wherein the selecting means calculates an integrated value of a CT value of each of the plurality of sample tomographic images in a predetermined region and selects a sample tomographic image with a smallest fluctuation of the integrated value of the CT value.

Claim 9 (currently amended): An X-ray CT apparatus according to claim 7, ~~characterized in that~~ wherein the selecting means determines a correlation between sample tomographic images having adjacent cardiac time phases of the plurality of tomographic images having the different cardiac time phase and selects a sample tomographic image having a largest correlation.

Claim 10 (currently amended): An X-ray CT apparatus according to claim 7, ~~characterized in that~~ wherein the selecting means calculates an integrated value of a CT value of each of the plurality of sample tomographic images having the different cardiac time phase in a predetermined region, determines a difference between the integrated values of the CT values of sample tomographic images having adjacent cardiac time phases, and selects a sample tomographic image having a smallest difference.

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Claim 11 (currently amended): An X-ray CT apparatus according to claim 7, ~~characterized by~~ further comprising memory means for storing the projection data acquired over a plurality of heart beat cycles and projection data synthesizing means for reading the projection data corresponding to the cardiac time phase of the sample tomographic image selected by the selecting means and synthesizing the projection data, wherein the image reconstructing means reconstructs the projection data synthesized by the projection data synthesizing means.

Claim 12 (currently amended): An X-ray CT apparatus according to claim 7, ~~characterized in that~~ wherein the sample tomographic image generating means generates the plurality of sample tomographic images in a predetermined cardiac time phase range determined based on the correlation data between the heartbeat information and the static cardiac time phase that are determined previously.

Claim 13 (currently amended): An X-ray CT apparatus according to claim 12, ~~characterized in that~~ wherein the correlation data is prepared to each of different portions of the subject, and the detecting means comprises input means for setting the predetermined portions.

Claim 14 (currently amended): An X-ray CT apparatus according to claim 12, ~~characterized in that~~ wherein the correlation data includes at least a correlation between a

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heart rate and a static cardiac time phase.

Claim 15 (currently amended): An X-ray CT imaging method of generating a tomographic image by reconstructing projection data acquired by scanning a predetermined slice of a subject, ~~characterized in that~~ said X-ray CT imaging method comprising detecting a static cardiac time phase with a small amount of motion artifacts ~~is detected~~ in a predetermined portion of the subject based on heartbeat information acquired in association with the projection data, and generating the tomographic image ~~is generated~~ by reconstructing projection data corresponding to the detected static cardiac time phase.

Claim 16 (currently amended): An X-ray CT imaging method according to claim 15, ~~characterized in that~~ further comprising acquiring correlation data between the heartbeat information and the cardiac time phase ~~is previously acquired to~~ from each subject, ~~[[and]]~~ wherein the static cardiac time phase is detected based on the correlation data.

Claim 17 (currently amended): An X-ray CT imaging method according to claim 15, ~~characterized in that~~ further comprising generating a plurality of sample tomographic images having ~~[[a]]~~ respective different cardiac time phase ~~are generated~~ phases based on the projection data and the heartbeat information, selecting a sample tomographic image with a small amount of motion artifacts ~~is selected~~ from the plurality of sample

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tomographic images, and using a cardiac time phase corresponding to the selected sample tomographic image ~~is used~~ as a static cardiac time phase.

Claim 18 (currently amended): An X-ray CT imaging method according to claim 17, ~~characterized in that~~ wherein an image size of the sample tomographic image is set smaller than that of the tomographic image.

Claim 19 (currently amended): An X-ray CT imaging method according to claim 15, ~~characterized in that~~ further comprising acquiring correlation data between the heartbeat information and the static cardiac time phase ~~is previously acquired to~~ from each subject, and generating the plurality of sample images ~~are generated~~ in a predetermined cardiac time phase range determined based on the correlation data.